IN THE CLAIMS:

CLEAN VERSION OF THE AMENDED CLAIMS

1. (previously presented) An apparatus for non-contact three-dimensional measurement of bodies consisting of a turntable to receive a body and an optical triangulation sensor with at least one radiation source, radiation detector, and an optical system, characterized in that said triangulation sensor (2) is placed above said turntable (1) and is movable along an axis using a driving mechanism so that radiation from the radiation source hits said body, that said body is located on the turntable (1) in a system of coordinates determined, on the one hand, by at least two parallel lines (g1, g2) or body edges with a known spacing (d) and angles (α, β) of the turntable (1) and, on the other hand, by at least two measuring points at known distances (R1, R2) from a center (M) and known displacement (c) of the triangulation sensor (2) between these measuring points, and that said turntable (1), the driving mechanism and said triangulation sensor (2) are connected to a data processing and control unit.

2. (previously presented) The apparatus according to claim 1, characterized in that said radiation source (3) of said triangulation sensor (2) is placed in such a way that the radiation from the radiation source (3) impinges perpendicular to the surface of said turntable (1).

3. (previously presented) The apparatus according to claim 1, characterized in that said triangulation sensor (2) is placed on a hinge or ball-and-socket joint above said turntable (1) and is movable along an axis using the driving mechanism, and that there is at least one sensor that directly and/or indirectly measures the angle between the radiation (9) and the workpiece.

4. (original) The apparatus according to claim 1, characterized in that at least some areas of the surface of a body that produces excessive scattering in the form of multiple reflections of the radiation (9) from said radiation source (3) are fixedly and/or removably covered by a convering body of known thickness and with low-scattering surface.

5. (original) The apparatus according to claim 1, characterized in that the parallel lines or body edges of a measuring body are straight or annular on said turntable (1).

6. (original) The apparatus according to claim 1, characterized in that a measuring body with at least two edges or a measuring body with at least two lines is placed on said turntable (1) when determining a system of coordinates only.

7. (original) The apparatus according to claim 1, characterized in that said turntable (1) has at least two end stops for bodies placed at a distance from each other.

8. (original) The apparatus according to claim 1, characterized in that at least one magnet is integrated into said turntable (1).

9. (previously presented) A method for determining a system of coordinates for measuring points on an apparatus for non-contact three-dimensional measuring of bodies comprising

- a turntable (1) to receive said body,

- an optical triangulation sensor (2) with at least one radiation source (3), radiation detector (4), and an optical system that is placed above said turntable (1) and is movable along an axis using a driving mechanism so that the radiation (9) from said radiation source (3) hits said body, and

- a data processing and control unit for turntable (1), driving mechanism and triangulation sensor (2), wherein at least two lines (g1, g2) or body edges running in parallel at a known distance (d) are used to determine angles (α, β) of turntable (1) by rotating said lines and subsequently capturing them in the measuring spot of said triangulation sensor (2) in a first and a second position of said triangulation sensor (2) displaced from said first position by the known dislocation c, said angles being used to calculate the distances R1, R2 of said triangulation sensor (2) from the center (M) of said turntable and to further calculate the coordinates x, y of said triangulation sensor (2) relative to the turntable center (M) as coordinates of origin.

10. (original) The method according to claim 9, characterized in that said radiation source (3) of said triangulation sensor (2) is placed in such a way

that the radiation from the radiation source (3) is perpendicular to the surface of said turntable (1).

11. (previously presented) The method according to claim 9, characterized in that the parallel lines or body edges of a measuring body are arranged straightly or annularly on said turntable (1).

12. (previously presented) The method according to claim 9, characterized in that a measuring body with at least two edges or a measuring body with at least two lines is placed on said turntable (1) when determining a system of coordinates only.

13. (previously presented) An apparatus for non-contact three-dimensional measurement of bodies comprising

a turntable to receive a body;

a radiation source;

a radiation detector;

a driving mechanism;

a data processing and control unit;

an optical system,

wherein the radiation source, the radiation detector, and the optical system form an optical triangulation sensor; wherein the triangulation sensor (2) is disposed above said turntable (1) and is movable along an axis using the driving mechanism so that radiation from the radiation source hits said body, wherein said body is located on the turntable (1) in a system of coordinates determined, on the one hand, by at least two parallel lines (g1, g2) or body edges with a known spacing (d) and angles (α, β) of the turntable (1) and, on the other hand, by at least two measuring points at known distances (R1, R2) from a center (M) and known displacement (c) of the triangulation sensor (2) between these measuring points, and that said turntable (1), and wherein the driving mechanism and said triangulation sensor (2) are connected to the data processing and control unit.

14. (previously presented) The apparatus according to claim 13, wherein said radiation source (3) of said triangulation sensor (2) is placed in such a way that the radiation from the radiation source (3) impinges perpendicular to the surface of said turntable (1).

15. (previously presented) The apparatus according to claim 13, further comprising

a hinge or ball-and-socket joint disposed above said turntable (1), wherein said triangulation sensor (2) is placed on the hinge or ball-and-socket joint above said turntable (1) and is movable along an axis using the driving mechanism; and

at least one sensor measuring an angle between the radiation (9) and a workpiece.

16. (previously presented) The apparatus according to claim 13, further comprising

a covering body of known thickness and with low-scattering surfaces, wherein the body is a body producing excessive scattering in the form of multiple reflections of the radiation (9) from said radiation source (3), wherein at least some areas of the surface of the body which produces excessive scattering in the form of multiple reflections of the radiation (9) from said radiation source (3) are fixedly and/or removably covered by the covering body of known thickness and with low-scattering surfaces.

17. (previously presented) The apparatus according to claim 13, wherein the parallel lines or body edges of a measuring body are straight or annular on said turntable (1).

18. (previously presented) The apparatus according to claim 13, wherein a measuring body with at least two edges or a measuring body with at least two lines is placed on said turntable (1) when determining a system of coordinates only.

19. (previously presented) The apparatus according to claim 13, further comprising

at least two stops for bodies disposed at said turntable (1), wherein the at least two end stops for bodies are placed at a distance from each other.

20. (previously presented) The apparatus according to claim 13, further comprising

at least one magnet integrated into said turntable (1).

21. (previously presented) A method for determining a system of coordinates for measuring points on an apparatus for non-contact three-dimensional measuring of bodies comprising

installing a turntable;

receiving a body on the turntable;

placing an optical triangulation sensor (2) including at least one radiation source (3), radiation detector (4), and an optical system above said turntable (1);

moving the triangulation sensor (2) with a driving mechanism along an axis so that the radiation (9) from said radiation source (3) hits said body, and

using at least two lines (g1, g2) or body edges running in parallel at a known distance (d) to determine angles (α, β) of turntable (1) by rotating said lines and subsequently capturing them in the measuring spot of said triangulation sensor (2) in a first and a second position of said triangulation sensor (2) displaced from said first position by the known dislocation c in a data processing and control unit for turntable (1), driving mechanism and triangulation sensor (2); and

using said angles to calculate the distances R1, R2 of said triangulation sensor (2) from a center (M) of said turntable and to further calculate the

coordinates x, y of said triangulation sensor (2) relative to a turntable center (M) as coordinates of origin in the data processing and control unit for turntable (1), driving mechanism and triangulation sensor (2).

22. (previously presented) The method according to claim 21, further comprising

placing said radiation source (3) of said triangulation sensor (2) in such a way that the radiation from the radiation source (3) is perpendicular to the surface of said turntable (1).

23. (previously presented) The method according to claim 21, further comprising

placing a measuring body with at least two edges or a measuring body with at least two lines on said turntable (1) only during a determining of a system of coordinates.